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**LISTING OF THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1 1. (original) An apparatus for routing messages in wireless networks, comprising:  
2 a first plurality of filters, each of said plurality of filters adapted to provide a  
3 plurality of frequency-based message signals converted from an optically-based signal;  
4 a plurality of mixers connected to the first plurality of filters, the mixers adapted  
5 to mix the plurality of frequency-based message signals with a plurality of sub-carriers to  
6 generate a plurality of frequency-based sub-carrier modulated message signals;  
7 a frequency generator connected to the plurality of mixers for providing the  
8 plurality of sub-carriers to the mixers;  
9 a combiner connected to the mixers for combining the plurality of frequency-  
10 based sub-carrier modulated message signals;  
11 a second plurality of filters connected to the combiner and adapted to receive and  
12 group the plurality of frequency-based sub-carrier modulated message signals;  
13 a plurality of optical transmitters, each of said plurality of transmitters connected  
14 to one of the second plurality of filters for optically converting and transmitting the  
15 frequency-based sub-carrier modulated message signals.

1 2. (original) The apparatus of claim 1 wherein the each of the first plurality of filters  
2 is centered at a pre-defined subcarrier frequency.

1 3. (original) The apparatus of claim 2 wherein the plurality of filters are RF filters.

1 4. (original) The apparatus of claim 1 wherein the frequency generator generates and  
2 applies a particular sub-carrier frequency to one of the mixers according to control  
3 information associated with the frequency-based message signal.

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1 5. (original) The apparatus of claim 4 wherein the control information is associated  
2 with the frequency-based message signal via a generalized MPLS (GMPLS) label.

1 6. (original) The apparatus of claim 4 wherein the control information is contained  
2 in a header portion of the frequency-based message signal.

1 7. (original) The apparatus of claim 1 wherein the second plurality of filters are  
2 bandpass filters.

1 8. (original) The apparatus of claim 1 further comprising a receiver device for  
2 receiving the optically converted and transmitted sub-carrier modulated message signals  
3 and filtering the sub-carrier frequencies from the frequency-based message signals.

1 9. (currently amended) Method for routing messages in wireless networks  
2 comprising the steps of:  
3 optically receiving one or more composite optical signals;  
4 converting said one or more composite optical signals into a plurality of  
5 frequency-based message signals;  
6 mixing each of the plurality of frequency-based message signals with a  
7 corresponding unique sub-carrier associated therewith to generate a plurality of sub-  
8 carrier modulated frequency-based signals;  
9 combining and grouping said plurality of sub-carrier modulated frequency-based  
10 signals; and  
11 optically converting and transmitting each group of said plurality of sub-carrier  
12 modulated frequency-based signals.

1 10. (original) The method of claim 9 wherein the step of converting includes filtering  
2 the received signals at predetermined sub-carrier frequencies to recover the frequency-  
3 based message signals contained therein.

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1 11. (currently amended) ~~The method of claim 9~~ Method for routing messages in  
 2 wireless networks comprising the steps of:  
 3 optically receiving one or more composite optical signals;  
 4 converting said one or more composite optical signals into a plurality of  
 5 frequency-based message signals;  
 6 mixing each of the plurality of frequency-based message signals with a  
 7 corresponding sub-carrier to generate a plurality of sub-carrier modulated frequency-  
 8 based signals;  
 9 combining and grouping said plurality of sub-carrier modulated frequency-based  
 10 signals; and  
 11 optically converting and transmitting each group of said plurality of sub-carrier  
 12 modulated frequency-based signals;  
 13 wherein the step of mixing includes interpreting control information associated  
 14 with the frequency-based message signal to determine the appropriate sub-carrier for  
 15 mixing.

1 12. (original) The method of claim 11 wherein the control information is contained  
 2 within a generalized MPLS label of the frequency-based message signal.

1 13. (original) The method of claim 11 wherein the control information is contained  
 2 within a header of the frequency-based message signal and assigns a sub-carrier  
 3 frequency thereto.

1 14. (new) The method of claim 11, wherein the step of converting includes filtering  
 2 the received signals at predetermined sub-carrier frequencies to recover the frequency-  
 3 based message signals contained therein.